Universal Power Charger 1600

90-255VAC INPUT, 12V/60A, 24V/40A and 24V/60A CHARGER

Approved condition for use (CE mark):
Marine and Automotive applications
Fixed installations in buildings
Type approved: E13 3026 and E13 3027

The Universal Power Charger 1600 is the middle module in a range of three sizes. The power output of the 1600 series belies its size.

This power output, from such a small package, is achieved through high efficiency using the very latest electronic components.

The micro-processor control of the UPC chargers has preset regimes which accurately charge Flooded as well as AGM and Cyclic Duty GEL batteries.

The charger can be equipped with features such as external temperature/voltage sensors for charging of batteries mounted remotely from the charger, significantly improving the rate of battery charging.

For larger powers you should consider the the UPC3200 series which gives up to 3.2kW!

For lighter duties the smaller 800 series should be considered.

FEATURES

- 90 - 255VAC input
- Also available in 110VAC
- 12V and 24V (with 36V and 48V options)
- Output current 40-60A
- High efficiency/cool running
- Small and easy to install
- Latest MosFET technology
- Microprocessor controlled with preset regimes for VRLA GEL and AGM and Flooded
- Fully automatic 4 stage charge cycle control
- Future proof – program upgradeable
- Remote temperature/voltage sensor option
- Applications and in-service support from a UK company

Intelligent Charging

Unlike basic chargers, the UPC charger operates on an advanced principle making it suitable for both overnight and opportunity charging.

An optimum four stage charging regime (see overleaf) safely refills the battery in the quickest time possible - thereby improving the life of the battery.

Better charged batteries last significantly longer.

After switch-on, or after the battery voltage dips, the charger will operate at its maximum rating, bulk charging the battery as fast as possible.

The UPC is programmed to continue bulk charging until it reaches a higher voltage - "forcing" charge into the battery. Accurate sensing avoids the charger reaching the 'gassing' point and it safely switches to a

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second stage bulk charge, and finally to a taper charge. This process drastically reduces the time taken to get to full charge. In addition to this, the charger is temperature compensated, adjusting its output to ensure that when the batteries are cold the voltage is raised and when warm the voltage is reduced. This ensures charging in cold weather and avoids gassing in warm conditions.

Optional Panels and Sensing

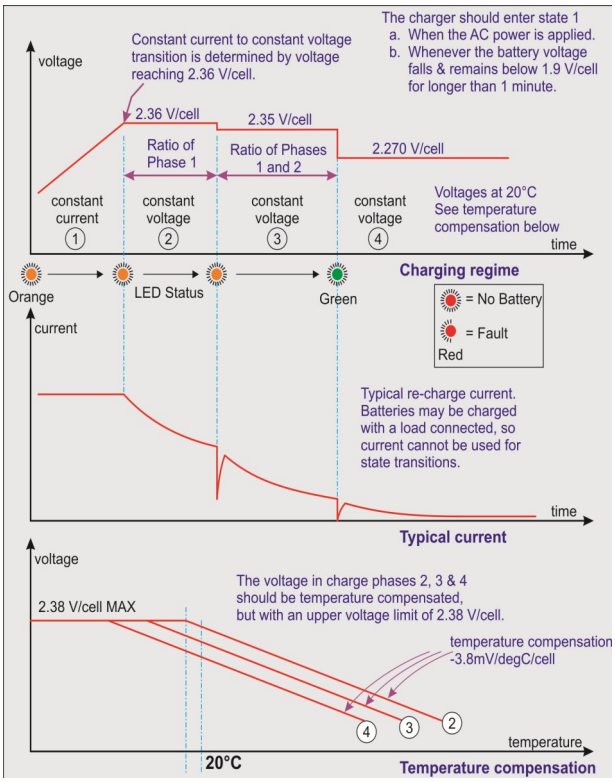
A remote sensor is available where the battery is located in a different climatic environment or long charging cables are needed.

High Specification Protection

The charger is equipped with many of the protection features not found in other chargers (see specification below)

Higher Output Voltages

The UPC 1600 is available with higher voltages of 36V/40A, 48V/30A, 72V/20A and 96V/15A (based upon 230VAC input). These may be on extended lead-times.


The charger should enter state 1
a. When the AC power is applied.
b. Whenever the battery voltage falls & remains below 1.9 V/cell for longer than 1 minute.
voltage
Constant current to constant voltage transition is determined by voltage reaching 2.36 V/cell.
2.36 V/cell
2.35 V/cell
2.270 V/cell
Ratio of Phase 1
Ratio of Phases 1 and 2
constant current 1
constant voltage 2
constant voltage 3
constant voltage 4
Voltages at 20°C See temperature compensation below
time
Charging regime
Orange
LED Status
Green
= No Battery
= Fault
Red
current
Typical re-charge current. Batteries may be charged with a load connected, so current cannot be used for state transitions.
time
Typical current
voltage
2.38 V/cell MAX
The voltage in charge phases 2, 3 & 4 should be temperature compensated, but with an upper voltage limit of 2.38 V/cell.
temperature compensation -3.8mV/degC/cell
4
3
2
temperature
20°C
Temperature compensation

Part number	96560	96564	96565
Battery voltage	12V	24V	24V
Output current @230VAC	60A	40A	60A
Output current @120VAC	30A (nom)	20A (nom)	30A (nom)
Nominal power	840W	1120W	1680W
Typical efficiency	88%		
Input voltage	90V-255V (45-400Hz)		
Dimensions & weight	268 (L) x 136 (W) x 89 (H) mm, 2.3kg		
Environmental protection	IP20		
Features	Power factor corrected		
Options	Remote status lamp panel **96590,** Remote Sense 2.5m **96591**, Remote Sense 20m **96593** , Power Supply Conversion **96592**		
Charging regimes	Freely ventilated—VRLA GEL/AGM—Power supply (selectable)		
Operating temperature	-25°C to +40°C		
Storage temperature range	-55°C to +85°C		
Quiescent current	Switched off <2mA, current on 150mA		
Protection	Temperature controlled cooling fan, short circuit, reverse polarity, over/ under input voltage, over temperature		
AC Connection	AC connection, PVC cord, 3 x 1.5mm2, DC connection RK twin 2x10mm2		
Mounting arrangement	Mounting Straps as standard		
Standards	'E' mark type approval		